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By-Aaron, Robert L.

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The Research and Development Center of the University of Georgia investigated the behavioral differences among advantaged and disadvantaged preschool children as part of an attempt to develop the most efficient way of assuring success at the first-grade level. A comparative study of a preschool stimulation program and the traditional kindergarten program was made. The socioeconomic status of the subjects was considered. While other studies on preschool children conducted at the Research and Development Center are cited, only the tabulated results for a selected sample are presented and discussed. These results indicate that the disadvantaged group of the stimulated preschool program was superior to the advantaged group of the traditional kindergarten program in auditory memory, book-related behaviors, letter and word reading, and writing behaviors. This paper reviews earlier studies on early reading and preschool programs and includes 25 references and a chart summarizing selected experimental preschool programs and their results. (NS)

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Dr. Robert L. Aaron
Assistant Professor
Research and Development
Center
Fain Hall
University of Georgia
Athens, Georgia 30601

Research Assistants
Diane DeLong
Lacy Marcotte
Hattie Patman

U. S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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EARLY CHILDHOOD EDUCATION

Summary, Observations, Research

Session 12B The Role of Preschool Instruction

The Research and Development Center, University of Georgia, was funded by the U. S. Office of Education in 1966. Its purpose is to develop a comprehensive preprimary instructional program. The Center's commitment is to keep selected groups of children together from age three through twelve so the concept of continuous, structured stimulation may be fully implemented.

The immediate thrust of the Research and Development Center has been to find the most efficient way to assure success at the first grade. To this end extensive units have been developed in a direct effort to stimulate

early achievement-oriented behaviors, especially reading, in the project children. Great care is taken to assure a successful, non-forced experience.

Research reports as late as 1965 indicated that an early start in reading tended (1) to "wash out," (2) to adversely affect other areas of the child's development, and failed (3) to produce any real difference between children, as the child moved through the primary grades (10, 13, 19, 20, 24). An examination of the literature reveals the following: (1) the sketchy research showing the "wash out" or "wilting" effect on the children who have been stimulated to read early indicates a singular lack of continuation of these stimulation concepts into the primary and/or intermediate grades. The Denver Study (12) was one of our better controlled longitudinal studies. The emphasis was on an early reading start in kindergarten, and continuation of the stimulation through grade five, for the experimental group. One control group had the same early start but dropped into the standard curriculum at first grade. A second control did not have the kindergarten start but began the stimulation program at first grade. The third control group began first grade in the traditional structure and continued there. The results show (1) the experimental group's kindergarten gains were maintained through the fifth grade, and (2) that gains made in kindergarten could not be maintained if not followed by an adjusted, accelerated program.

Dolores Durkin (6) whose intensive efforts to follow a sample of "early readers" not stimulated to read in a formal preschool setting, but whose home environment appeared to lead them to read, expresses the following ideas about her data: (1) After six years of instruction early readers maintained

their superiority in reading over classmates of the same mental age who did not read until first grade. (2) A bored attitude and the confusion predicted for early readers taught by non-professionals did not materialize as problems.

Thus, two rather thorough research studies tend to disprove all three doubts about early reading outlined earlier.

Most reading professionals agree that very young children can be taught to read and comprehend at a very young age. Theodore Clymer (5) states the expressed position of a number of reading professionals when he stresses the need for further studies that investigate later benefits shown by children who are taught to read early.

The Research and Development Center is systematically teaching the beginning reading skills to all three, four, and five-year olds, a total of 350 children, in two Georgia research centers located in public school systems. Intensive testing is being undertaken that will help to answer Clymer's call for a definition of the quality and type behaviors, other than a higher achievement score, in which early readers show a superiority.

Achievement Results

After five months of consistent stimulation in reading, writing, and oral language behavior the R & D Center project children showed the following results on the Jastak Wide-Range Achievement Test. Four-year-olds in the advantaged group had a mean score of seven months achievement. Five-year-olds in the advantaged group showed a mean score of thirteen months achievement,

and five-year-olds in the disadvantaged group had a mean achievement score of ten months. Only four of the 48 advantaged and five of the 110 disadvantaged five-year olds could not score on the test. The reading performance levels of the groups, advantaged and disadvantaged, are quite similar with the children able to word-call and comprehend on a range from the first preprimer through the 2^1 reader. Most children are functioning in the second preprimer, with very few, approximately nine of 170, unable to read any words. Mean Binet IQ for the advantaged five-year olds is 113, and for the disadvantaged five-year olds, 95.

Indeed, evidence from other preschool programs for the disadvantaged child report similarly striking results. Robinson's (18) North Carolina Project reports that a sample of the three-year olds are reading simple sentences, with comprehension. Bereiter's first class of 20 extremely disadvantaged children, after two years of intensive preschool, scored an average growth rate of one and one-third months for each month of instruction, evidenced by a mean Jastak Wide-Range Achievement Test score of 2.6 on entry to first grade. Englemann reports they have maintained their initial gain in the conventional classroom and achievement test results show them scoring significantly higher than their classmates. Weikart (25) found very positive achievement changes in his Perry Project children who had two years of preschool. On completion of their second year in the traditional curriculum he found his sample to be some 26 percentage points above non-stimulated, disadvantaged children from the same population subsample. Spaulding (2) works with quite severely deprived and handicapped in the Educational Improvement

Program at Duke. Many are the most difficult to move forward in the achievement dimension. After one year of preschool stimulation, the project children entering first grade achieved significant gains on the Metropolitan Readiness Test and a test of linguistics skills. Nimnicht, (16) working with bilingual children in Colorado and California, achieved a mean readiness test score at the 70th percentile, while a socioeconomically comparable control group had a mean score at the 30th percentile.

Theory and Preschool Programs

In the '20's and '30's we were looking at the body; then along came Freud's ideas in the late '30's and everyone began to turn to the "mind" for an explanation of why children react in such different ways in response to the same stimulation. Dr. Louise Bates Ames (1), Gesell Institute, was explaining why the work of great American preschool pioneers like Gertrude Hildreth (8), Marion Monroe (14), Arnold Gesell (7), Louise Ilg (7), and herself had been lost, so to speak, in the rush to "bigger and better" things. Appropriately, by rearranging a few words here and there, her earthy analysis easily applies to today's almost desperate search for "the program" among the more outstanding early childhood projects in operation across America. Let's explore some of the thinkers who have been calling us away from the 'body' school of the '30's and relate them to today's preschool project designs. To conclude we shall return to the Gesell School and its relevancy to today's programs.

John Dewey's progressive school ideas emphasized the interest and effort of a child as primary motivators toward solving his own problems. His emphasis

on intelligent problem-solving through self-selection of appropriate materials sounds like a male version of the Montessori approach. As Dewey's influence began to wane in the '40's and '50's there came a surge of interest in Jean Piaget (17) who wants teachers able to analyze a child's degree of readiness for a particular discovery so he may be presented an "experience" with which he can have a high degree of success. Piaget emphasizes that the reasoning processes of the child at various tasks be so laid out that the teacher can effectively relate the intellectual content and cognitive abilities of the child to the demands of the task. Montessori, Dewey, and Piaget could have found a most compatible theoretical position. Many of the programs we will discuss owe much of the position they take to these three.

A disciple of the same school of psychology whence John Dewey arose, B. F. Skinner, began writing of his operant conditioning ideas in 1938. In 1954 he launched his programmed instruction materials in the form of auto-instructional devices and programmed workbooks (21). Few major differences between the Piaget group and Skinner appear over the basic instructional program. Both groups believe in careful sequencing of the learning activities. Where they do diverge is on several points. Piaget lays stress on peer relationships and freeplay in the learning process. He feels the need for much scope and breadth in content for the learning activities, a design not easily accommodated by Skinner's programmed materials.

Beginning in the 1960's J. McVicker Hunt (9) and Benjamin Bloom (3) reviewed the literature on intellectual development among children and proposed the guarded, but often misused, idea that sometime in the near future

we may find a way to overcome low intelligence test scores among the disadvantaged by beginning in infancy to stimulate the cognitive behaviors of those most prone to suffer the cultural deficit. To some it appeared the "static IQ" idea had been thoroughly smashed and that programs could now move ahead to up the IQ test scores of groups by an average of 10 to 20 points. Briefly, I will touch on some very clear research on IQ score change. Perhaps the position taken in this paper is much too simplistic. In any event, the rapid progress we are now making in many areas of knowledge suggests we keep an open mind about future programs involving change in IQ test score.

Also, in 1960 Jerome Bruner (4) made his now famous quote to the effect that "any subject can be taught effectively in some intellectually honest form to any child at any stage of development." Bruner also dabbled his toes in Piaget's stream by saying, "Mastery of the fundamental ideas of a field involves the development of an attitude toward learning and inquiry, toward guessing and hunches, toward the possibility of solving problems on one's own."

In today's preschool programs we can see the outlines drawn by these, and other well-known spokesmen of early childhood education. Traditional kindergartens fall in line behind the developmental sequence of the Gesell School. There are those programs like Glen Nimnicht's eclectic approach which go the way of Skinner's autoinstructional materials, but which also lean heavily on the works of Dewey, Piaget, and on Maria Montessori's "prepared environment." Lauran Resnick's Preprimary Education Program (PEP) at Pittsburg looks to Bruner and careful analysis and sequencing of the desired behaviors, but turns

to the opposite pole, Montessori, and the "Prepared environment" for the other major part of her program. Unlike Nimnicht, who emphasizes that the child initiate the verbal interaction between himself and the teacher, Hesnick feels the teacher must prescribe at certain points in the curriculum by initiating the "lesson."

Bruner's strongly-worded position is essentially followed by Bereiter-Englemann at the University of Illinois, Aaron-Mason at the University of Georgia, Robinson at the University of North Carolina, and Spaulding, Educational Improvement Program, Duke University.

The British Infant Schools are strongly influenced by, or reflect, the ideas of Montessori-Piaget-Dewey. Weikart, the Perry Project, is exploring Hunt's and Bloom's concepts about change in intelligence, but now indicates an interest in moving downward from his current focus, ages 3-5, to ages 1-3.

Changes in IQ

Interest in the preschool intervention program as a vehicle by which to significantly raise the IQ score of the disadvantaged child has recently received new impetus.

In 1961 the American Association on Mental Deficiency produced a consensus of reports emphasizing the value of preschool stimulation as a possible antidote for the intelligence deficit suffered by the disadvantaged child. Then, in 1964 Bloom lent the weight of his influence to this idea by emphasizing the critical value to IQ change of training before four years of age. He hypothesized that at least half the intellectual power of the child is determined

by age four.

Recent studies by Kohlberg, 1967 (11) and Sprigle, 1967 (23) report first year gains of approximately 15 IQ points. To date, the Perry Project offers the only long-term evaluation of IQ gains, in situations where a somewhat structured curriculum has been followed. The results on a small sample of children, beginning at age four and going through the second grade, indicate the following:

(1) No differences existed between the groups at the onset of the program.

(2) By the end of the first preschool year the experimental group had a mean IQ gain of 12.7 points. The control group made a mean IQ gain of 7.2 points. A statistically significant difference.

(3) By the end of kindergarten and at the end of first grade, the difference is not statistically significant.

(4) By the end of second grade the two groups are almost identical in IQ score.

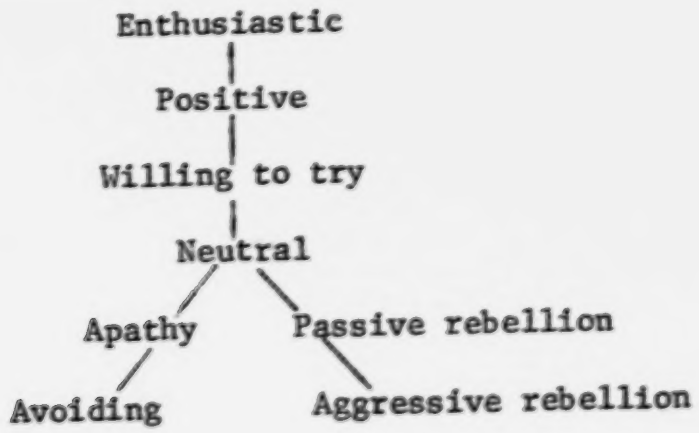
Binet data collected in January 1968, on 60 four-year olds and 60 six-year olds enrolled in the Intensive Stimulation program of the Research and Development Center, University of Georgia, indicate similar findings. The subjects were tested as threes and fives in January, 1967. Mean gains are respectively three and four IQ points. The results reflect quite common changes and indicate that the January to January testing pattern does not pick up the low initial score and the striking upswing at the end of the year. The midyear testing shows that the first year surge is an artifact of the new experience, reflecting the idea that the initial testing does not

truly measure the child's ability. January or June are more representative of the base performance level of the child.

The significant change in the preschooler appears to occur along achievement lines. Studies generally indicate that gains made under stimulation are not only maintained but, given a continuous stimulation model, added to.

The initial Binet pretesting of IQ, prior to stimulation, apparently is not a measure of the young child's functional level. The testing and the following stimulation period may well be viewed as a complete process aimed at moving the child forward in the following manner.

Prior to testing, the child's intellectual position is one of either Avoiding behavior or Aggressive rebellion toward the demands on him. A primary thrust of the initial testing and stimulation must be directed toward moving the Avoiding child through the Apathy stage and the Aggressive rebellion child through the Passive rebellion stage. This initial thrust is attempting to bring both types of preschoolers to a Neutral emotional position. From this focal posture the motivation efforts are now directed at moving the child to successively stronger reactions of Willing to try, Positive behavior, and ultimately, Enthusiastic behavior (22).



Once the child is succeeding at some level above the Neutral position, and a satisfactory schedule of success and praise reinforcement is in operation, then a further IQ testing should come very close to defining the functional Intelligence Quotient. The evidence produced by Weikart and the University of Georgia testing tend to support this contention that the effects of a program of early childhood stimulation must be based on the interval of time between the first posttest and a succeeding testing, after the debilitating effects of the lack of motivation and test experience have been overcome.

The Gesell School

Arnold Gesell, Frances Ilg, and Louise Bates Ames (7) put together some rather exhaustive observational data on the reading and writing behaviors of preschoolers from ages one to five years. The data were collected on some fifty children of high intelligence from a high socioeconomic environment. The sample was followed on a longitudinal basis. Most of the sample had attended the nursery attached to the Yale Clinic.

Much of the data produced by Hildreth, Monroe, Gesell, Ilg, and Ames from the late 1920's until the mid 1940's, and by Ilg and Ames as late as 1950, focused on the developmental nature of the patterns. Much emphasis was placed on "growth trends," and such ideas as "developmental sequence." While the authors did caution about the individual nature of the child, their language tends to create a sensation of the invariant nature of the process. Gesell states, "The sequence of a gradient (the Gesell gradients) tends to remain the same for all children in spite of individual variations." While there are

sufficient references in Gesell's preface statement to "use the gradients as a guide to understanding the individual child's maturity level, it appears the fine work done by these early American pioneers seems to have been quite neglected as a valuable set of guides. In order to make use of this valuable resource of information we have compiled the data with the idea of using them in at least two major ways. (1) As a yardstick by which to measure our project children in a longitudinal fashion. This should help us establish whether our stimulation program is accelerating the children past the reference behaviors at an increasingly earlier age. (2) As a device to help precisely define the behavioral differences among children in our population by race, sex, and socioeconomic status, tasks not undertaken by Gesell. As work on the gradients progressed it became clear that many of the statements were not in precise behavioral terms and often left doubt as to the quality of the observations, by use of terms such as "appears," "may," "seems." A diagnostic test was constructed, composed of a series of hurdles which the child had to attempt to pass. In the course of this interaction with such things as books, words, pictures, and paper and pencil the child evidences his degree of sophistication in the areas of "Picture Reading," "Letter and Word Behavior," "Handling Books," "Book-Related Behaviors." Some behaviors were not easy to elicit without elaborate stage setting and were put in the schedule of behaviors that would be collected by applying systematic observation efforts to activities in the room where the behaviors were most likely to occur.

The first major testing with the instrument was an effort to look at

some of the Research and Development Center population along two dimensions, socioeconomic level (high and low) and stimulated versus traditional kindergartens. We also wanted to see if the low income child, with benefit of the stimulation, approximated Gesell's high income child of 28 years ago.

The data below represents a sample of the total collected and here will be discussed only for the effects of the Research and Development Center reading and writing programs on the disadvantaged sample (n=47). Comparison is with the sample of upper and high-income children from traditional kindergartens (n=95).

FIVE-YEAR OLDS READING BEHAVIORS

Behavior	Age in Months	Stimulated Disadvantaged %	Traditional Advantaged %
		Picture Reading	
Identifies pictures named by adults.	15-18	95	67
Learns names of unknown objects in book (memory).	18-24	90	33
Recites verbatim a line from a story. Restates oral language which accompanies a picture.	30	100	53
Explains pictures, or "reads" them.	36	86	67
Can recite exact plot of story, after hearing it once.	48	48	0
		Handling Books	
Turns pages randomly.	15	0	7
Books are to be put away after use.	30	95	60
Learns machanics of book handling. 1. Page turning (R to L) 2, Holding book 3. Opens book from front 4. Places bound side to left.	72	52	33
		Book-Related Behavior	
Begins to notice orientation of pictures, (orients pictures of own line of vision.)	15-18	100	67
Calls looking at a book "reading."	18-24	95	67
Wants to look at pictures in book when being read to.	36-42	86	67

Behavior	Age in Months	Stimulated Disadvantaged %	Traditional Advantaged %
Book Related Behaviors			
Looks right at written words as read to.	66	81	27
Points with finger at words.	72	72	27
Begins to realize printed text tells reader what to say.	48	95	47
Regards print when looking at books.	66	76	13
Logical Thinking			
Remembers words learned for 1 hour.	24	86	40
Can go through three-step logic in thinking.	36	76	93
Letter and Word Reading			
May identify some capital letters (from alphabet book, or blocks).	36-48	81	67
May be able to say or sing alphabet.	36-42	38	60
Chooses printed words as most like those on a printed page when presented printed and written words, and a number series.	48	14	7
Recognizes (by sight) own first name.	60	67	47
Knows sign words (stop-go) in and out of context.	60	100	53
Underlines letters on request.	60	67	33

Letter and Word Reading Continued

Behavior	Age in Months	Stimulated Disadvantaged %	Traditional Advantaged %
Spells cat, dog, no, yes, mommy, own name, names of siblings.	60	90	20
Orally spells four or more words.	60	48	7
May spell own or siblings' names with wooden letters.	60	14	53
Picks out capitals on own, first at left or right of a page, then at beginning of sentence or text. In identifying letters or words may pick first or last letter on a line and read vertically, top to bottom, or bottom to top.	60-66	67	47
May know some words on page, (often first or last on line).	60-66	86	13
Most know entire alphabet.	66	57	27
Interest in small letters.	72	90	33
Matches words.	72	43	20
Simple oral spelling.	72	72	13
Beginning to develop sight vocabulary.	72-84	95	20

FIVE-YEAR OLDS WRITING BEHAVIORS

Behavior	Age in Months	Stimulated Disadvantaged %	Traditional Advantaged %
Circular scribbles or makes a diagonal mark. Cannot differentiate the two.	18	65	29
Some can imitate circular mark. Many scribble or mark at an angle.	24	95	68
Almost all imitate circular mark.	36	75	55
May show mild tremor in fine motor coordination. Makes controlled lines, then scribbles.	42	0	26
Copies square.	48	100	80
Asks to be let print a few salient capital letters. Large and irregular. Prefers circular letters.	48	85	40
Prints on page at random. May print forms in horizontal position.	48	0	30
May write from R to L without reversing any letters.	60	0	40
May cease to identify letters previously known when attempting to print them.	60	0	22
Interest in printing own name. Large toward end.	66	10	22
Prints same words. All caps or mixture.	72	90	20
Pencil grasp tight. Middle finger caved in.	84	10	25

Discussion of Data

A general analysis of the data leaves one very clear conclusion. When compared with advantaged children from professional level families, who are in a traditional kindergarten, the stimulated disadvantaged group shows a clear superiority in these ways:

1. More perform effectively in auditory memory, as evidenced by their high level of success in memory for names of unknown objects, reciting verbatim a line from a story read, and reciting the exact plot of a story after one reading.

2. In Book Related Behaviors there is, among the disadvantaged subjects, more ability in the mechanics of book handling and more knowledge of how to care for books. The experimental subjects know, in a significantly greater ratio, that the purpose in looking at a book is to "read."

3. Indices of reaction to print indicate that the experimental group is extremely word conscious, and quite sophisticated towards reading.

4. Letter and Word reading is probably the area where the effects of the stimulation are most striking. The project children clearly surpassed the advantaged controls in capital letter knowledge, recognition of own first name, knowledge of sign words-in and out of context, simple oral spelling, sight word knowledge, interest in small letters, visual discrimination of word form, and number who had begun to develop a sight vocabulary.

The Writing Behaviors test clearly shows the influence of the Research and Development Center writing-spelling program. On the progressively more

difficult task of copying geometric shape models the stimulated children were clearly superior. In behaviors involving the production of letters and words, as a group, they were again well ahead of the control group. The controls showed a higher incidence of poor control in fine motor coordination, printing on the page at random - and in horizontal position, complete rotation of name when writing, and of ceasing to identify letters previously known when attempting to print them.

In the future, preschool stimulation and evaluation appears headed toward more intensive behavior analysis. It will take considerable finance and much effort, but the dream of the good primary teacher, to base all her activities on an analysis of the individual's reinforcement, speed, and motivational needs may be just a short step away.

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Summary of Selected Experimental Preschool Programs

	Children Involved	Teacher Utilization	Subject-Matter	Classroom Management
Bereiter-Englemann (Illinois)	800 disadvantaged. Ages 3 - 5	1 to 5 ratio	1. Language Concepts 2. Arithmetic 3. Reading 4. Music. (Adding Science, Writing).	Homogeneous grouping to narrow variation in ability.
Nimnicht (Far West Regional Lab.)	3,4 year old disadvantaged sample. Primarily Spanish-Americans and Mexican-Americans in California and Colorado.	Individual	1. Self concept 2. Perceptual acuity 3. Language factors 4. Abstract thinking 5. Conceptualization 6. Problem-solving.	Prepared environment. Complete freedom. Children initiate verbal interaction.
Resnick (PEP-Pittsburg)	Headstart classes and non-ready first graders.		1. Open-shelf book and manipulative materials 2. Attending 3. Following directions 4. Sensory motor-visual and auditory discrimination 5. Conceptualization 6. Classification	Combination of Homogeneous grouping and prepared environment (for Individualization).
Weikart (Perry Project)	Age 3 - 5 (current focus age 1 - 3)	Individual	1. Heavy language emphasis (verbal bombardment) 2. Sensory motor-visual discrimination and perception 3. Independence, social adjustment, heightened learning potential.	Small group interaction and non-group structured activities of the traditional kindergarten.

	Children Involved	Teacher Utilization	Subject-Matter	Classroom Management
Spaulding (EIP-Duke)	Nursery. 55 - 2, 3, and 4 year old disadvantageds. 18-5 year old disadvantageds.	2, 3, 4 year olds 1 to 5 ratio. 5 year olds 1 to 9 ratio.	1. Linguistic Materials 2. Jingles and rhymes for auditory sound-symbol training. 3. Writing 4. Letter name knowledge 5. Language experience 6. Categorization skills 7. Conceptualization skills	Homogeneous grouping at 5. Below this age much large-group activity.
Robinson (North Carolina)	1 month to 4 years. 25 children who are family siblings. Day care concept. Socio-economic range.	1 to 3 ratio	1. Comprehensive health services. 2. Motor coordination activities. 3. Music 4. Art 5. French 6. Science 7. Computation skills 8. Reading	Individualized. Exposed to activities appropriate to age range.
Aaron-Mason (Georgia)	(1) 68 disadvantaged 3, 4, and 5 year old preschoolers. (2) 180 advantaged 3, 4, and 5 year old preschoolers.	(1) 3, 4 year olds. 1 - 5 ratio. Some taught individually. 5 year olds 1 - 12 ratio. (2) Advantaged. 1 to 5 ratio. Some taught individually.	1. Reading 2. Writing 3. Oral Language 4. Mathematics 5. Science 6. Social Science 7. Art 8. Music	Some individualization. Homogeneous grouping to narrow range in ability. Cross-chronological age grouping.

	Children Involved	Teacher Utilization	Subject-Matter	Classroom Management
Deutsch Institute of Developmental Studies N. Y. U.	4, 5 year olds	Groups of 2-6. Individual work with those accelerating rapidly	1. Language development 2. Reading 3. Writing 4. Concept formation 5. Self-image	Much like standard class structure. Smaller groups more materials to keep working those not directly instructed at any moment.
Gray-Miller Early Training Project, Peabody College	87 disadvantaged children. Age 3	1 to 5	1. Visual perception 2. Conceptual development 3. Language development	Small and large groups
British Infant Schools	Up to 40 per class. Age 5	Individual attention	1. Basic School Subjects a. Reading b. Writing c. Spelling d. Mathematics e. Art f. Music g. Science	Prepared environment. Complete pupil freedom in regard to all classroom activities. Montessori influence. Corners are established for subject areas. Many intrinsically motivating materials provided. Library alcove. Play corner.

	Children Involved	Teacher Utilization	Subject-Matter	Classroom Management
Caldwell (Syracuse)	75 children between 6 mos. and 5 1/2 years. 2/3 disadvantaged.	1 to 4, often 1 to 1 ratio	1. Name learning 2. Labeling (Doman) 3. Language Experience 4. Phonics 5. Oral Language	All learning activities are carried on in a very small setting. More often than not, individualized.
Ira Gordon (Florida)	Disadvantaged 4 main groups. of infants, 3 months to 1 year old. (1) 75 stimulated from 3rd month to second birthday. (2) 75 stimulated from 3rd month to first birthday. (3) 13 stimulated for the second year, but not the first. (4) 12 receiving no stimulation.	Parents are trained to stimulate. Individual.	1. Verbal Communication 2. Motor Coordination 3. Problem-Solving 4. Visual discrimination 5. Problem-Solving 6. Number readiness 7. Prewriting behaviors 8. Following directions 9. Color Names	Emphasized importance of parent ideas, attitudes. Role playing, motion pictures, mastery of teaching techniques under close supervision. Each three parent educators were assigned a staff member as supervisor. In-service days once weekly.

	Instructional Concepts In Use	Test Results
Gray-Miller	(1) Strong reinforcement schedule. More from concrete to abstraction. Strong extrinsic motivation. (2) Achievement motivation through progress records, concrete evidence, affectation to positive story images, competitive tasks. (3) Delay of gratification (4) Persistence (5) Perceptual skills-visual (6) Conceptual skills-space, time, size (7) Language development-much verbal interaction.	Entry to first grade. Experimentals gained 9 IQ points. Second experimental group gained 5 IQ points. The two control groups lost three and six points. Findings for language changes and concept development also favored the experimental groups.
Bereiter-Englemann (Illinois)	Behavior analysis-rapid movement through sound-symbol, coding approach by strong teacher intervention. Small group, intensive instruction. Teaches to bottom child. Group responses used to save time for focusing on individual children not coding accurately. Attempts to present skills majority of group members can master. This feedback allows more careful pacing. Economizes time for inducing behaviors. Move fast in operations (sight words) and plug facts (printed-spoken word correspondence) in as child has basis for understanding. Move ahead quickly in "soft areas-operations areas." Uses Initial Teaching Alphabet.	After two years of preschool (group of 15). Average reading performance 2.6, on Jastak Wide-Range Achievement Test. These children now in traditional classes and continue to learn new skills at an above average (for class) rate.
Nimnicht (Far West Regional Lab.)	Behavior Analysis. Eclectic intrinsically motivating devices. Environment is prepared to permit the learner free exploration. Learner determines own rate for piece of equipment, day, and year. Group sessions once daily: Child free to come or not. Child initiates verbal interaction with teacher.	"First grade teachers indicate some washing out of gains by midyear. They indicate children have not been doing particularly better in the first grade than a comparable group without the preschool experience." Within

	Instructional Concepts In Use	Test Results
Nimnicht (Far West Regional Lab.)		(Continued) the group deprived four-year-olds, After 1 year are much like middle-class 3's. After 2 years deprived 4's are very similar to middle-class 4's with the same two years' experience. On the Metropolitan Reading Readiness Test stimulated 5 year olds, who began at age 3, scored at the 70th percentile, while a comparable control group scored at the 30th percentile.
Resnick	Skill Analysis. Individualized by self-directed activity. Disadvantaged lack certain specifiable "entering" skills that we take for granted in other groups. Emphasis on trinsically motivating materials, but teacher is free to innovate in order to move child through specified skill sequence. If necessary, fall back on extrinsic motivation (rewards) until child wants to do things for sake of mastery of the task.	None-just beginning pilot phase.
Weikart	Language stimulation-labeling systematic abstraction training. Emphasis on teacher success at organizing and implementing content. Stress is placed on the teacher utilizing the voice as a power tool, forcing the attention of the child to the critical element with which he must be concerned. Emphasizes Piagetian theory and attempts to use it in working from such things as concrete to abstraction in symbol-learning. Teachers develop guides as they go along. Critical goals are emphasized (1) content contains critical indicators (tests) of potential success (2) Teacher language must be	Initial IQ change of 15-33 points. Slowly deteriorate. After 4 years no significant difference between control and experimental. By third grade, after 4 years of stimulation, experimentals are 20-26 percentage points above controls on achievement tests. On entry into 3 year-old program children very homogeneous, but by kindergarten classes divide into 2 distinct groups. Group 1 accelerates ahead. Group 2 performs just like controls.

	Instructional Concepts In Use	Test Results
Aaron-Mason	Behavior analysis. Continuous posttest (imbedded) evaluation. Teachers are committed to producing behavior in child by use of outline, or by synthesis of own and outlined procedure. Rapid movement to sight words sound-symbol relationships in use. Heavy emphasis on child experiencing many activities with words, especially much opportunity to compare and contrast, in game form. Children to be kept in intact groups from age three through the sixth grade.	(1) 5 year old disadvantaged. 5 months of instruction. Jastak Wide Range Achievement Test. Mean reading gain 10 months. (2) 4 and 5 year old advantaged. 5 months of instruction Jastak Wide Range Achievement Test. Mean reading gain for four was 7 months. Mean reading gain for fives was 13 months.
Caldwell	Developmentally oriented by believe in teacher structuring some activities and specifying behaviors sought. Teachers are selected for their warm attitude toward children. Combination of contextual phonics and language experience stories.	
Spaulding (EIP-Duke)	Eclectic. Heavy emphasis on developing a linguistics program. Instruction not formalized for mastery until child is 5. Use feedback person to help teacher assess her effectiveness, and to evaluate pupils. Emphasize techniques for getting poor performers achieving. Attempting to define the most efficient age at which preschool instruction may generally begin.	Metropolitan readiness test and Linguistics Test (locally developed). Significant changes in females entering first grade, after 1 year of stimulation. Linguistics Test results compare favorably with those of similar experimental group in California.
Robinson (North q	Longitudinal study in child development. Going across board, rather than specializing, to see what kinds of gains are really possible. Building new self-contained center where a minimum of 240 children from infancy through 6th grade will be housed in a longitudinal study.	All 3 year olds reading. Read sentences silently and indicate comprehension by selecting picture answers. On most tests, Bayley, Cattell, Gesell, children performing 1 1/2 standard deviations above the mean.

	Instructional Concepts In Use	Test Results
British Infant Schools	(1) Prepared environment-pupil needs decide schedule. Class routine is completely up to teacher. She leaves options open to the pupils. (2) Free day concept where teacher lists activities for day and lets children choose freely. (3) Subjects flow together, not separate. (4) Beginning reading. Children learn from each other. Family grouping puts different ages together. Allows older to help younger and serve as a model for them. (5) Widest possible range of reading schemes used. Sight reading, phonics, linguistics, some ITA. (6) No textbooks, only books. Buy sample of all available basal readers. (7) Writing comes along with reading. (8) Language experience stories are beginning reading program.	Children in traditional, formal classes (American Style) do better on conventional tests than the British infant school children. Greatest difference in mathematics, least in reading. Indications are that British Infant graduates perform better in books.
Deutsch	Continuous skill sequencing. Eclectic and experimental to develop techniques. Emphasizing (1) definition of skills and sequence (2) Development of teaching methods and materials (3) Techniques and instruments to evaluate group and individual results. Content: (1) Visual and Auditory discrimination (2) Phonics (3) Sight words (4) Writing skills (5) Early reading.	End of first grade, after 2 years of preschool and 1 year of standard curriculum. Experimentals mean reading grade placement 2.8 Controls 2.0 difference significant at the .01 level. On tests of short medial vowels and ending consonants the experimental first graders were significantly better than control second and third graders. No significant difference was found by sight vocabulary, although the controls were taught by a sight method.

	Instructional Concepts In Use	Test Results
Ira Gordon (Florida)	(1) Emphasis on breaking poverty cycle by altering parent behavior, thus leading to heightened infant stimulation. (2) Disadvantaged women teach the mothers how to stimulate infants. (3) Systematic series of perceptual-motor-auditory-tactile-kinesthetic inputs.	Pilot Project. Design is workable. Will now carefully research using. (1) Social Reaction Inventory (2) Markel Voice and Language Assessment. (3) Racial and Color awareness measures (4) Osgood's semantic differential.